

Salvage spoil transformer core and bobbin and re-wind make it as useful parts.

Below showing the 2 burn transformer remove from machine.



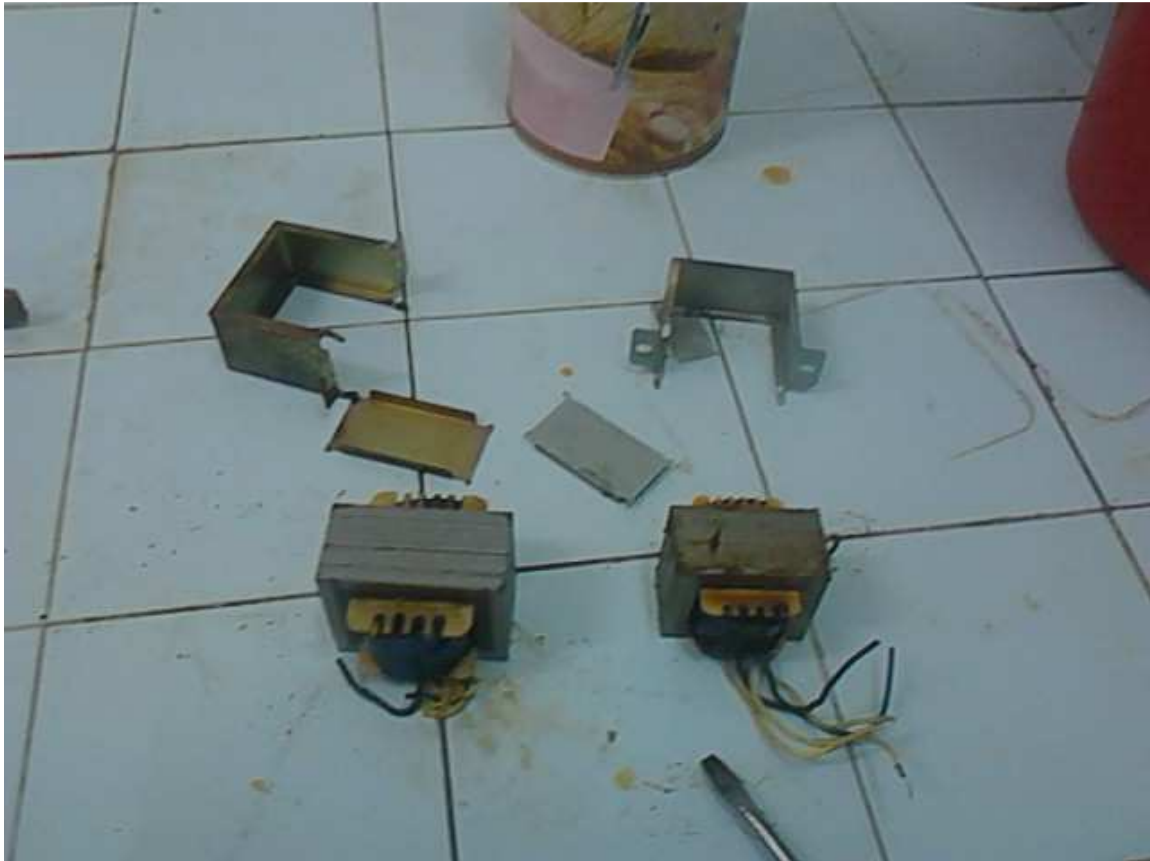
The left hand side transformer having 15VA rating and the right hand side is 36VA rating.. The rating it can be read from original label or do the comparison for the transformer size with good one.

Remove the core by soap the transformer in solvent such as thinner.



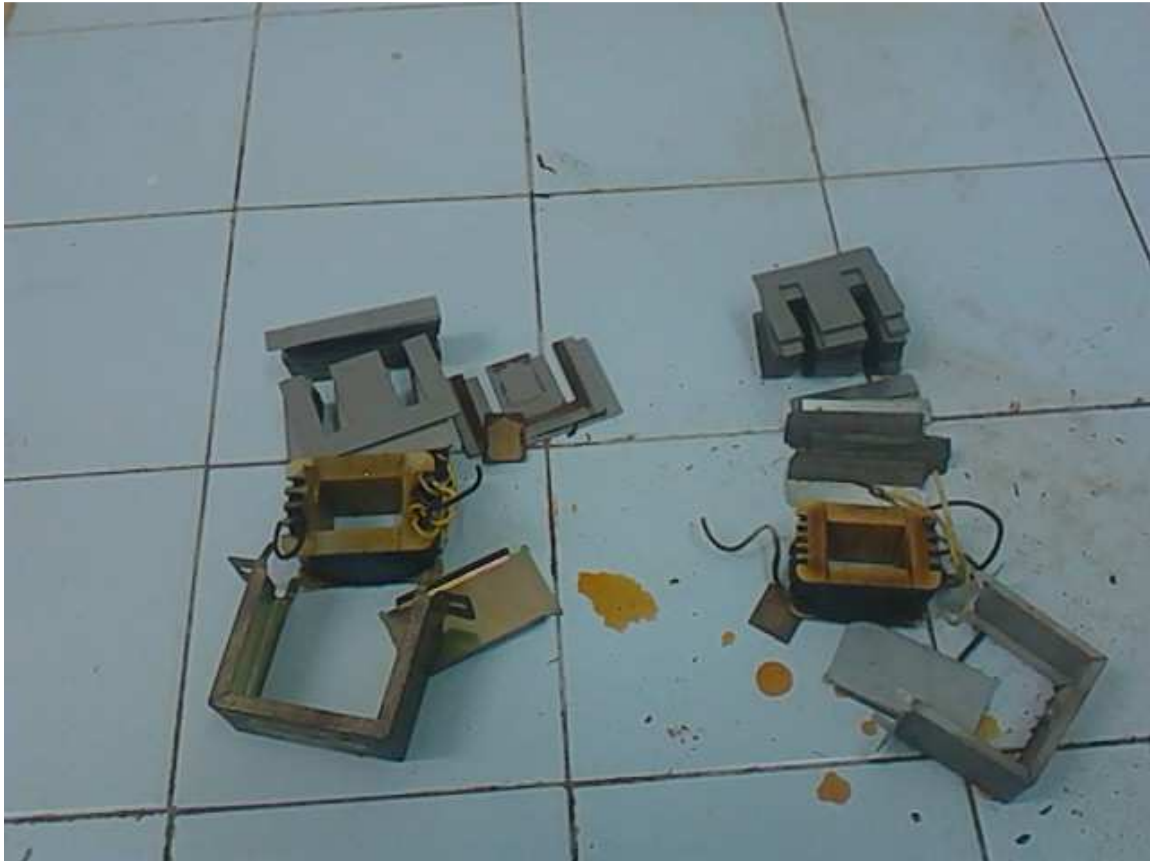
Let it soap for few hours it will softer the varnish make the transformer easy to remove.

First we have to remove the bracket as below.



Then we remove the silicon steel carefully, it might be difficult to remove the first slide. After remove the first slide it will getting easier to remove.

This is showing after removed all the silicon steel core.

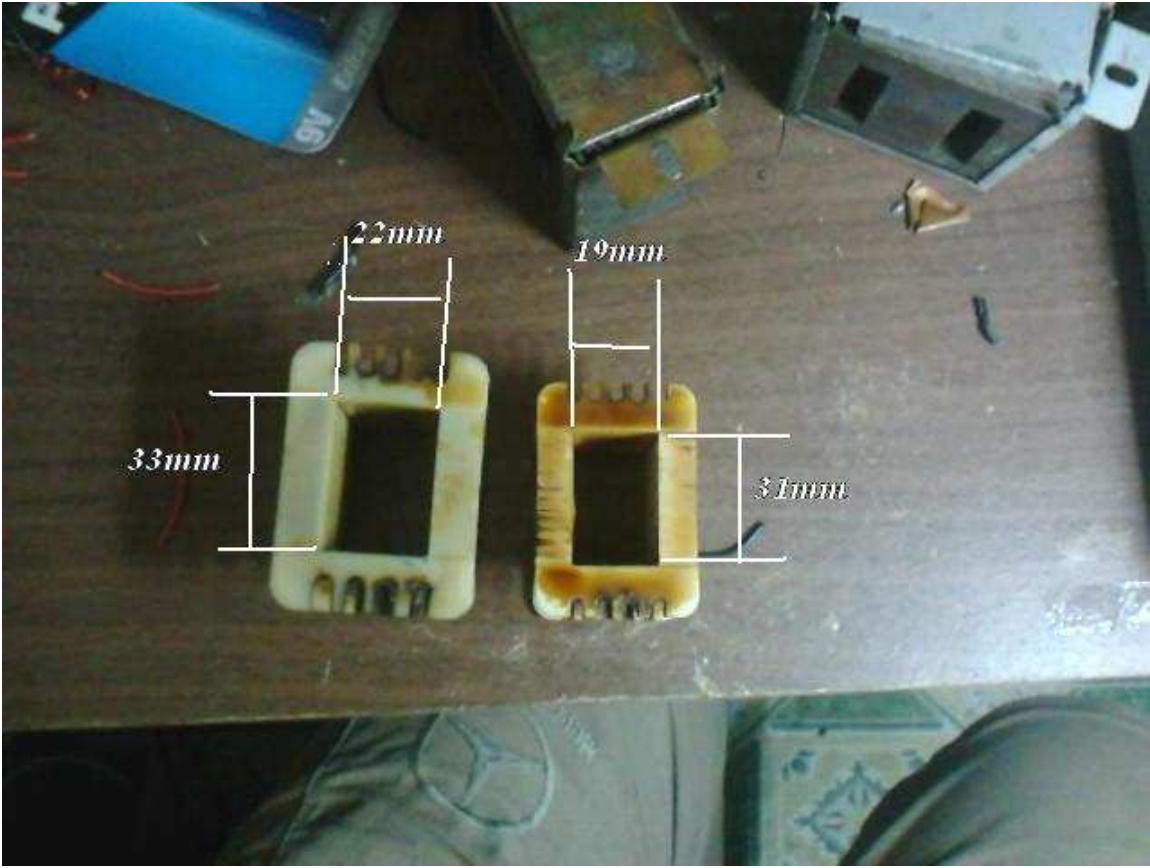


After remove the core, we can cut away the burn copper wire inside the bobbin.

Below showing after cut out the copper wire.



Here is the bobbin inner dimension layer we will use for calculate the number of turn per volt.



The left one is 36VA bobbin and the right one is 15VA bobbin.

I'm using a wax paper (In here they often use for pack the chicken rice). And cut the size accordingly.



To calculate the number of turn per voltage as below.

Input voltage 230V , operating frequency 50Hz , flux density 1 Tesla , Core rating 36VA . Output 1 : 200V , output 2 : 6.3V

The input voltage 230V (4.44 x 50Hz x 1T x 22mm x 33mm)

= 1427 turn for 230V , I round up for 1400 turn.

For output 1 = 200V /230V x 1400 turn = 1217 turn (round up 1200 turn)

For output 2 = 6.3V /230V x 1400 turn = 38 turn (round up 40turn)

The aluminum wire I choice for primary and output one is 0.21mm , output 2 is 0.8mm. I don't really have the ideal what the actual size is , I'm calculate it base on current density , I push the wire higher rating which I using 4A /mm² for 0.21mm I can get 138mA , and 0.8mm I can get 2A .

Now is starting to wind the primary , I tried to use what can obtain at home or stationary shop . The primary start wire I use masking tape to stick it as below.



After finish primary as below.



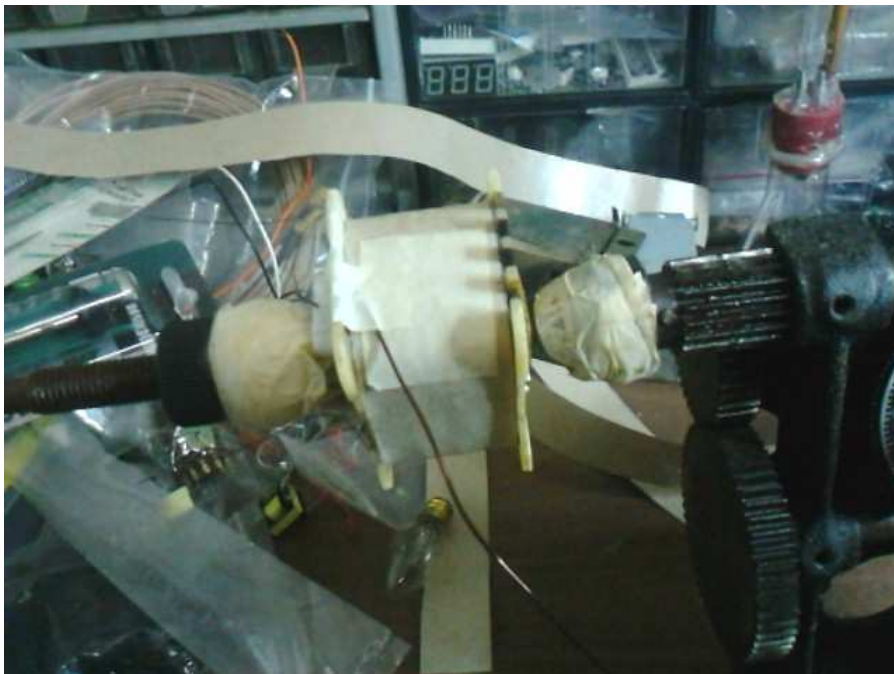
I apply masking tape again. Before wrap with wax paper.

This is how it look like after wrap with wax paper .



Repeat the same with secondary output 1 , which is 1200 turn.

Below show the output 2, which is 40 turn with 0.8mm wire.



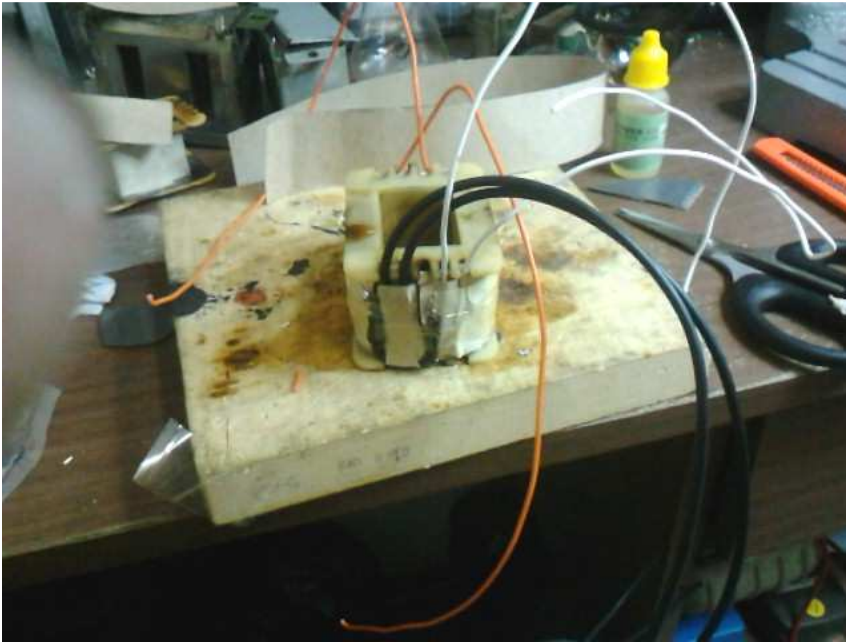
After finish all the winding , I warp with wax paper again and also warp with cello tape. Then I insert the wire and warp again with masking tape to make sure the wire in correct position.



To solder the aluminum wire, it need a special flux to make it able to solder.



Here is after solder and I warp again with cello tape.



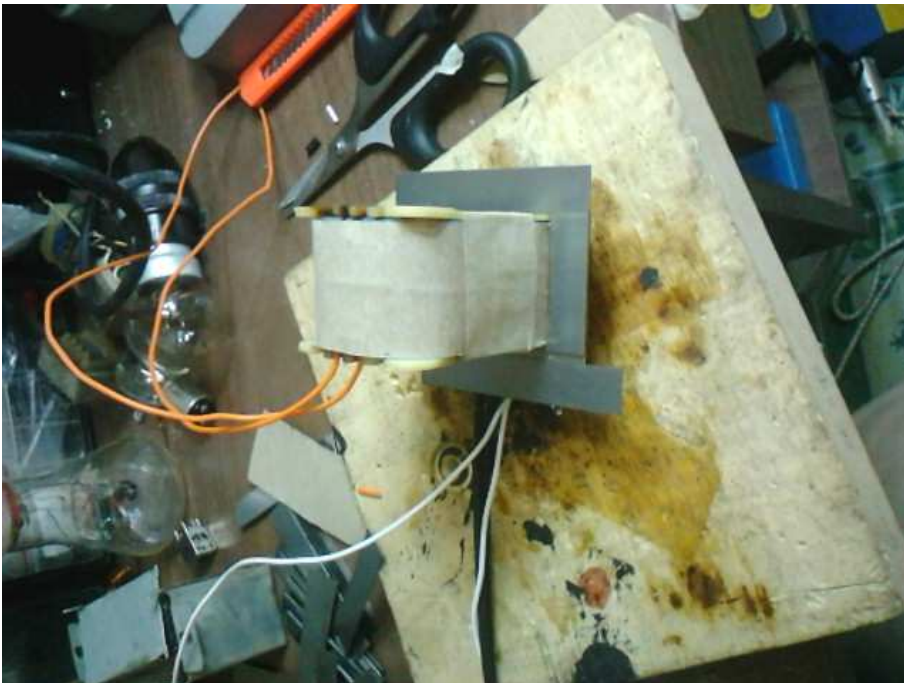
I place a carton paper to make it thicker so.



Here is after warp again with wax paper.



Then we can measure the connectivity between wire and coil to coil make sure they are connected and not short between coil to coil. Then I start inserting the core. E to left, I to right then E to right I to leave..

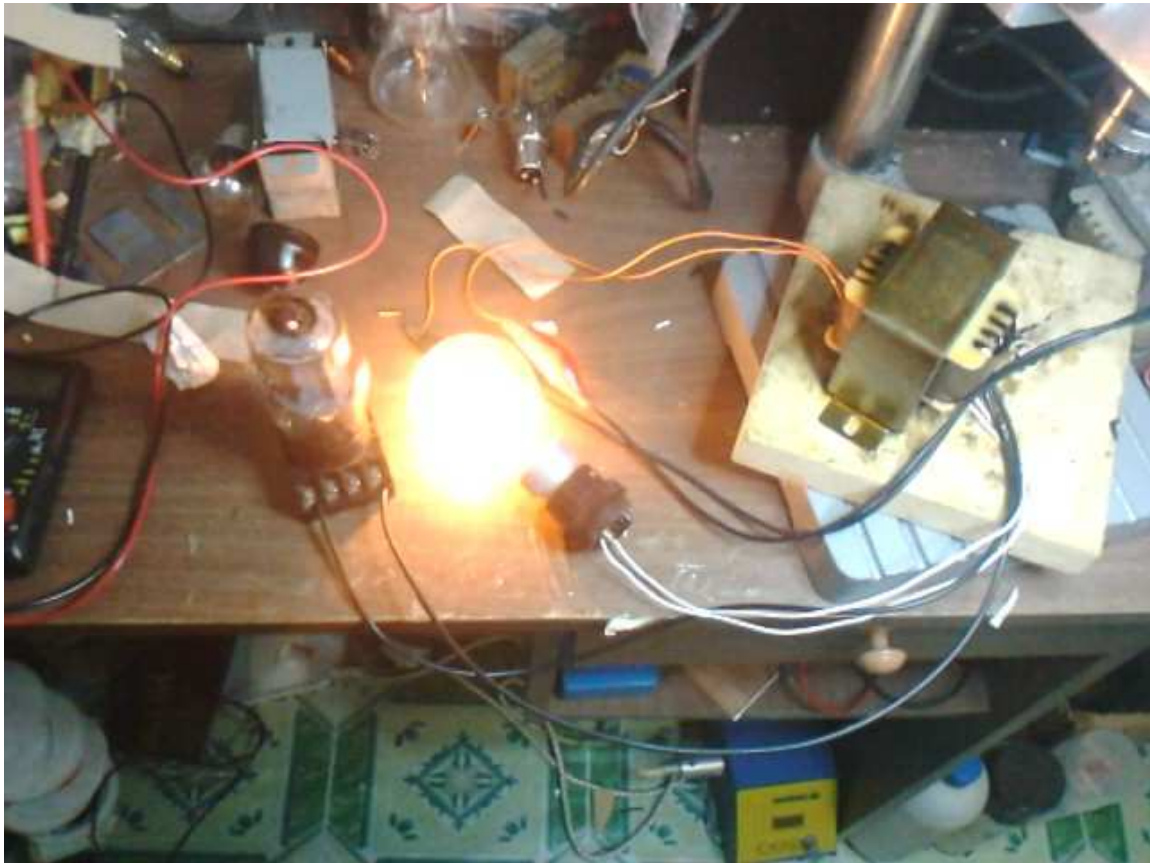


After insert all the core, I put back the bracket and then soap the transformer in varnish.



Make sure the varnish is covered all. Then take it out and put in the place with good air ventilation until the transformer varnish is dry up.. Without varnish the transformer still can work fine, it will easier to get rusty. The varnish also help to tighten the core, so it will not hum. If your place is hard to obtain the varnish you can ignore it just pain it with spray.

The final load testing I'm series with 200W bulb to protect if anything happen to the transformer, The output 1 I load with 25Watts bulb and output 2 I load with shorted grid 6L6. After 30minutes the transformer get just warm about 40degree I guess, it not really hot until untouchable.



The output 1 and output 2 voltage I got lower then what I aspect , 5.3V and 160V, after investigate. I did a mistake in primary turn.. I wind up 1600 turn instead of 1400 turn.. I can verify it by input to Output 2 6.3V or output 1 200V to measure back the primary..

Input to output 1 200V series with 60W bulb I measure the voltage 212V , but primary measure 290V !! obviously I make a mistake. I leave with it. I think is still usable .Good Luck.